

BIBLIOGRAPHICAL NOTICES.

An Introduction to Botany. By J. LINDLEY, Ph.D., F.R.S. Fourth Edition, with Corrections and numerous Additions.

DR. LINDLEY'S well-known Manual now makes its appearance in two considerable volumes, another proof, if such were wanting, of the increasing interest for botany in this country. This edition may almost be regarded as a new work compared with its predecessors, little remaining unaltered but the plan and illustrations, its principal value arising from its containing a carefully collected mass of quotations from almost all the more important memoirs and reports published during the interval since the former edition was printed.

Under these circumstances, we have to speak of the execution of the work more than of original subject-matter, and to indicate the manner in which the author has dealt with his materials.

In the first place must be mentioned with all praise the extremely lucid manner in which Dr. Lindley realizes and expresses the various doctrines he has to communicate; we have, probably, few scientific writers who excel him in this respect.

With regard to the first part of the work, treating of elementary structure, the recent investigations on the subject are very fully given in the form of extracts from our own pages, the Ray reports and similar sources. We may notice one error retained from the former edition, affirming what would be a strange anomaly if correct, viz. (i. p. 142) the quotation from the 'Ann. des Sc.,' that *Nerium Oleander* and other plants have cavities in the cuticle in lieu of stomates; the fact being that the stomates are situated in the walls of cavities in the leaves.

At page 266 (vol. i.) Dr. Lindley states that he does not see how Schleiden's views "affect the distinction stated to exist between Exogens and Endogens, or offer any valid objection to the employment of those terms." Now it is or should be a canon in terminology that one word should have only one meaning, and since those two words, Exogens and Endogens, have been used to express a distinction mistakenly assumed to exist, to retain and apply them on different grounds is surely inadmissible. To exogenous growth as existing in Dicotyledons, there is no corresponding or rather opposite process in Monocotyledons, to allow of the antithetical term, endogenous growth, the growth of Monocotyledons differing from that of the first year of Dicotyledons in points not at all contemplated by the author of the expressions in question.

In vol. ii. p. 82 *et seq.* we have a long discussion on the questions whether flowerless plants have sexes or seeds. Dr. Lindley is not inclined to admit their existence, but he concedes the idea of sexuality in the view taken by Mr. Thwaites; on the ground that "it is not so much the mere presence of sexes, or of a mysterious sexual essence, that is denied, as that the organs called sexual in flowerless plants are of the same, or a similar, nature as those known to be sexes in the higher orders." It seems to us that this is rather a

distinction without a difference. If we understand Mr. Thwaites's ideas correctly, he regards, in the case of simple conjugation for instance, one cell as the homologue of the pollen-grain, the other of the germinal vesicle of a flowering plant. The modifications of the envelopes of these essential elements are of no consequence as to the general theory. At the same time we agree with Dr. Lindley that the balance of evidence lies against the doctrine of sexuality in the flowerless plants. The unconfirmed statements of Schleiden on the fertilization in the Marsileaceæ are not alluded to; the analogy of the larger spores to ovules has certainly been satisfactorily shown, by the subsequent observations of Mettenius and Nägeli.

We were rather surprised to find (at p. 136. vol. ii.) a repetition of the old statement, that the old bark and the wood, of Dicotyledons, are separated in spring by the exudation of a slimy substance called cambium; we should have thought this an oversight had it not also occurred in the first volume; any one may convince himself that there is no solution of continuity by submitting a section to the microscope, but this section requires care and a very sharp knife.

There are other minute points which might be noticed; but looking at the work as a whole, and the fullness and especial clearness with which the multifarious questions are expounded, this would be an invidious task; and we feel that the work must be received as a most welcome contribution, not only by advanced students, but particularly by all now on the threshold of the science, who have indeed great facilities compared with those who date their first acquaintance with botany from but a few years back.

Narrative of an Expedition into Central Australia during the years 1844-5 & 6, &c., by Captain CHARLES STURT, F.L.S.: *with a Botanical Appendix* by ROBERT BROWN, D.C.L., F.R.S., F.L.S., and *Ornithological Notices* by JOHN GOULD, F.R.S.

This is not the place to give an account of the geographical results of this last expedition of "the father of geographical research;" if it were, we should be tempted to linger among its pages.

In this book the usually dreary and almost hopelessly depressing inland tracts of Australia are described by one, who has made them his home for many a weary month, in a way which reminds us of the narratives of the Arctic discoverers, Parry, Franklin, Richardson, Back and Buchan, or the antarctic voyage described by Ross and Hooker and M'Cormick. In their pages, such incidents as a white fox or little *Mus leucopus* visiting the icebound ships, a little marmot coming into a tent and snuggling, from the winter's blast, beside the fire, regardless of the sleeping terrier—the purple saxifrage (*S. oppositifolia*) creeping as it were out of the snow, the *Ledum palustre*, Cranberry, exquisite *Dryas octopetala*, *Oxyria*, and not a few *Ranunculi*—"icy" and "hairy," springing as if by magic out of the ground immediately when the snow has melted on some little favoured spot—*tell* in a way that can only be understood and enjoyed by the naturalist or the poet.